

RESULT 1

A59316

ghrelin precursor - human

N;Alternate names: preproghrelin

C;Species: Homo sapiens (man)

C;Date: 16-Jun-2000 #sequence_revision 16-Jun-2000 #text_change 21-Jul-2000

C;Accession: A59316

R;Kojima, M.; Hosoda, H.; Date, Y.; Nakazato, M.; Matsuo, H.; Kangawa, K.

Nature 402, 656-660, 1999

A;Title: Ghrelin is a growth-hormone-releasing acylated peptide from stomach.

A;Reference number: A59316; MUID:20067959; PMID:10604470

A;Accession: A59316

A;Status: not compared with conceptual translation

A;Molecule type: mRNA

A;Residues: 1-117 <KOJ>

A;Cross-references: GB:AB029434; NID:g6691571; PIDN:BAA89371.1; PID:g6691572

A;Experimental source: tissue stomach endocrine cells

A;Note: submitted to GenBank, June 1999

C;Comment: Ghrelin secreted by the stomach stimulates the release of somatotropin (growth hormone) from pituitary cells through a G-protein coupled receptor.

C;Superfamily: motilin

C;Keywords: hormone; lipoprotein; stomach

F;1-23/Domain: signal sequence #status predicted <SIG>

F;24-51/Product: ghrelin #status predicted <MAT>

F;52-117/Domain: carboxyl-terminal propeptide #status predicted <CTP>

F;26/Binding site: octanoate (Ser) (covalent) #status experimental

Query Match 100.0%; Score 611; DB 1; Length 117;
Best Local Similarity 100.0%; Pred. No. 9.3e-55;
Matches 117; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

| | | | |
|----|----|--|-----|
| Qy | 1 | MPSPGTVCSLLLLGMLWLDLAMAGSSFLSPEHQRVQQRKESKKPPAKLQPRALAGWLRPE | 60 |
| | | | |
| Db | 1 | MPSPGTVCSLLLLGMLWLDLAMAGSSFLSPEHQRVQQRKESKKPPAKLQPRALAGWLRPE | 60 |
| Qy | 61 | DGGQAEAGAEDELEVRFNAPFDVGIKLSGVQYQQHSQALGKFLQDILWEEAKEAPADK | 117 |
| | | | |
| Db | 61 | DGGQAEAGAEDELEVRFNAPFDVGIKLSGVQYQQHSQALGKFLQDILWEEAKEAPADK | 117 |

RESULT 1

GHRL_HUMAN

ID GHRL_HUMAN STANDARD; PRT; 117 AA.
AC Q9UBU3; Q8TAT9; Q9H3R3;
DT 28-FEB-2003 (Rel. 41, Created)
DT 28-FEB-2003 (Rel. 41, Last sequence update)
DT 15-MAR-2004 (Rel. 43, Last annotation update)
DE Ghrelin precursor (Growth hormone secretagogue) (Growth hormone
DE releasing peptide) (Motilin-related peptide) (M46 protein)
DE (UNQ524/PRO1066).
GN GHRL OR MTLRP.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A. (ISOFORM 1), AND ACYLATION OF SER-26.
RX MEDLINE=20067959; PubMed=10604470;
RA Kojima M., Hosoda H., Date Y., Nakazato M., Matsuo H., Kangawa K.;
RT "Ghrelin is a growth-hormone-releasing acylated peptide from
RT stomach.";
RL Nature 402:656-660(1999).
RN [2]
RP SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).
RA Kojima M.;
RL Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
RN [3]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RC TISSUE=Stomach;
RA Tomasetto C., Karam S.M., Rio M.-C.;
RT "Identification of a novel gastric protein m46.";
RL Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
RN [4]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RA Wajnrajch M.P., Ten I.S., Gertner J.M., Leibel R.L.;
RT "Genomic organization of the human Ghrelin gene.";
RL J. Endocr. Genet. 1:231-233(2000).
RN [5]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RX MEDLINE=22887296; PubMed=12975309;
RA Clark H.F., Gurney A.L., Abaya E., Baker K., Baldwin D., Brush J.,
RA Chen J., Chow B., Chui C., Crowley C., Currell B., Deuel B., Dowd P.,
RA Eaton D., Foster J., Grimaldi C., Gu Q., Hass P.E., Heldens S.,
RA Huang A., Kim H.S., Klimowski L., Jin Y., Johnson S., Lee J.,
RA Lewis L., Liao D., Mark M., Robbie E., Sanchez C., Schoenfeld J.,
RA Seshagiri S., Simmons L., Singh J., Smith V., Stinson J., Vagts A.,
RA Vandlen R., Watanabe C., Wieand D., Woods K., Xie M.-H., Yansura D.,
RA Yi S., Yu G., Yuan J., Zhang M., Zhang Z., Goddard A., Wood W.I.,
RA Godowski P.;
RT "The secreted protein discovery initiative (SPDI), a large-scale
RT effort to identify novel human secreted and transmembrane proteins: a
RT bioinformatics assessment.";
RL Genome Res. 13:2265-2270(2003).
RN [6]
RP SEQUENCE FROM N.A. (ISOFORM 1).
RC TISSUE=Blood;
RX MEDLINE=22388257; PubMed=12477932;

RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA Fahey J., Helton E., Kettelman M., Madan A., Rodrigues S., Sanchez A.,
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT "Generation and initial analysis of more than 15,000 full-length human
RT and mouse cDNA sequences.";
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

RN [7]

RP SEQUENCE OF 24-33.

RC TISSUE=Stomach;

RX MEDLINE=20389976; PubMed=10930375;

RA Tomasetto C., Karam S.M., Ribieras S., Masson R., Lefebvre O.,

RA Staub A., Alexander G., Chenard M.-P., Rio M.-C.;

RT "Identification and characterization of a novel gastric peptide

RT hormone: the motilin-related peptide.";

RL Gastroenterology 119:395-405(2000).

RN [8]

RP REVIEW.

RX MEDLINE=21203998; PubMed=11306336;

RA Kojima M., Hosoda H., Matsuo H., Kangawa K.;

RT "Ghrelin: discovery of the natural endogenous ligand for the growth

RT hormone secretagogue receptor.";

RL Trends Endocrinol. Metab. 12:118-122(2001).

CC -!- FUNCTION: Specific ligand for the growth hormone secretagogue
CC receptor type 1 (GHSR) inducing the release of growth hormone from
CC the pituitary. Has an appetite-stimulating effect, induces
CC adiposity and stimulates gastric acid secretion. Involved in
CC growth regulation.

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- ALTERNATIVE PRODUCTS:

CC Event=Alternative splicing; Named isoforms=2;

CC Name=1; Synonyms=Ghrelin;

CC IsoId=Q9UBU3-1; Sequence=Displayed;

CC Name=2; Synonyms=del-Gln14-ghrelin;

CC IsoId=Q9UBU3-2; Sequence=VSP_003245;

CC -!- PTM: O-n-octanoylation is essential for activity.

CC -!- SIMILARITY: Belongs to the motilin family.

CC -!- DATABASE: NAME=Atlas Genet. Cytogenet. Oncol. Haematol.;

CC

WWW="<http://www.infobiogen.fr/services/chromcancer/Genes/GhrelinID327.html>".

CC

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CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC the European Bioinformatics Institute. There are no restrictions on its

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---------------|-------|---------------------|--------|----|-------------------|-------------------|
| 1 | 611 | 100.0 | 117 | 3 | US-09-046-479-2 | Sequence 2, Appli |
| 2 | 611 | 100.0 | 117 | 4 | US-08-822-897C-2 | Sequence 2, Appli |
| 3 | 611 | 100.0 | 117 | 4 | US-09-608-810A-4 | Sequence 4, Appli |
| 4 | 611 | 100.0 | 117 | 4 | US-09-404-417A-2 | Sequence 2, Appli |
| 5 | 91 | 14.9 | 18 | 4 | US-09-404-417A-11 | Sequence |

6291653
6380158
6420521
6,629,729

530

326

227

328

309